

REMARKS

The Official Action dated December 23, 2003, and the Advisory Action dated April 5, 2004, have been received and their contents carefully noted. Filed concurrently herewith is a *Request for One Month Extension of Time*, which extends the shortened statutory period for response to April 23, 2004. Also, filed concurrently herewith is a *Request for Continued Examination*. Accordingly, the Applicant respectfully submits that this response is being timely filed.

The Applicant notes with appreciation the consideration of the Information Disclosure Statements filed on October 5, 1999, November 23, 1999, April 2, 2001, July 15, 2002, and September 2, 2003.

Claims 14-16, 18, 19, 31-36, 39, 40, 43, 44, 48-50 and 52-57 were pending in the present application prior to the above amendment. New claims 58-62 have been added to recite additional protection to which the Applicant is entitled. Accordingly, claims 14-16, 18, 19, 31-36, 39, 40, 43, 44, 48-50 and 52-62 are now pending in the present application, of which claims 14-16, 18, 19 and 58 are independent. For the reasons set forth in detail below, all claims are believed to be in condition for allowance. Favorable reconsideration is requested.

The Official Action dated December 23, 2003, rejects claims 14-16, 18, 19, 31-36, 39, 40, 43, 44, 48-50 and 52-57 as obvious based on the combination of JP 09-312260 to Hamatani et al., U.S. Patent No. 5,236,850 to Zhang, U.S. Patent No. 5,476,810 to Curran, and U.S. Patent No. 6,188,452 to Kim et al. The Official Action also relies on U.S. Patent No. 6,077,731 to Yamazaki et al. and asserts that it is equivalent to Hamatani. The Advisory Action dated April 5, 2004, continues to assert the rejections laid out in the Final Official Action (page 2, Paper No. 0304) but does not appear to specifically respond to the arguments of the Applicant made in the *Response* dated March 23, 2004. In response, the Applicant respectfully submits that a *prima facie* case of obviousness cannot be maintained against the independent claims of the present invention, as amended.

As stated in MPEP §§ 2142-2143.01, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

Also, MPEP § 2142 states that the examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. It is respectfully submitted that the Official Action has failed to carry this burden.

There is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify Hamatani (and/or Yamazaki '731), Zhang, Curran and Kim or to combine reference teachings to achieve the claimed invention.

The Official Action concedes that Hamatani does not teach "forming the semiconductor film by sputtering in an inert gas and the particular LCD structure claimed, forming the semiconductor film over a plastic substrate with an intermediate base film, and forming a gate insulating film comprising a benzocyclobutene (BCB) film on the semiconductor film" (page 2, Paper No. 1203). The Official Action relies on

Zhang to allegedly teach “forming a semiconductor film through sputtering in an inert atmosphere” (page 3, Id.), on official notice to allegedly teach “the LCD structure of claim 19” (Id.), on Curran to allegedly teach “the use of plastic substrates 20 as well as intermediate films” (Id.), and on Kim to allegedly teach “forming a gate insulating film of BCB” (Id.). The Official Action asserts that “[in] view of [Curran], it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the process of Hamatani et al. modified by Zhang so as to use a plastic substrate because such a substrate allows for a low cost device” (Id.). The Applicant respectfully disagrees and, for reasons provided in detail below, traverses the above assertions in the Official Action.

The Official Action does not offer a teaching of sufficient motivation from Hamatani, Zhang or Curran to show how or why it would have been obvious to use the plastic substrate 20 or intermediate films of Curran in the proposed combined device of Hamatani and Zhang. Just because it may be advantageous for the substrate of the Curran device to be formed of a plastics material (col. 3, line 55) does not by itself suggest that Curran could or should be applied to the combined device of Hamatani and Zhang without a specific teaching to that effect. The lack of motivation to combine Hamatani and Zhang with Curran is particularly glaring in this case when Hamatani itself teaches a preference for a glass substrate (see col. 2, lines 32-39, of Yamazaki '731). Therefore, the Applicant respectfully submits that there is a lack of motivation to combine Hamatani, Zhang and Curran.

Similarly, with respect to Kim, although the Official Action asserts that the reason for combining Kim with Hamatani, Zhang and Curran is to provide “an organic gate insulating layer of stable TFT characteristics” (page 3, Paper No. 1203), the Official Action does not show how or why it would have been obvious to use the BCB gate insulating layer of Kim in the proposed combined device of Hamatani, Zhang and Curran. Again, just because an object of Kim is to provide an AMLCD with an organic insulating layer with stable TFT characteristics (col. 2, line 46) does not by itself suggest

that Kim could or should be applied to the combined device of Hamatani, Zhang and Curran without a specific teaching to that effect. Hamatani appears to prefer the use of a thermal oxide film for a gate insulating film and it is not at all clear how or why one of ordinary skill in the art would look to Kim to substitute the BCB gate insulating layer of Kim for the thermal oxide gate insulating film of Hamatani. Therefore, the Applicant respectfully submits that there is a lack of motivation to combine Hamatani, Zhang, Curran and Kim.

It is noted that the inventions of the present invention as claimed are advantageous in view of safety and cost aspects. The process of forming an amorphous semiconductor film through a sputtering method can be made at low temperature with a high level of safety (see page 3, lines 4-7, of the present specification), the process of crystallizing the amorphous semiconductor film by irradiating with a laser light induces small stresses on the substrate (see page 12, line 12, of the present specification), and the process of forming a gate insulating film comprising a benzocyclobutene can be made at low temperature. Therefore, it is possible to use an inexpensive plastic substrate. While the Official Action relies on various teachings of the cited prior art to disclose aspects of the claimed invention and asserts that these aspects could be used together, it is submitted that the Official Action does not adequately set forth why one of skill in the art would combine the references to achieve the present invention.

Even assuming motivation could be found, the Official Action has not given any indication that one with ordinary skill in the art at the time of the invention would have had a reasonable expectation of success when combining Hamatani (and/or Yamazaki '731), Zhang, Curran and Kim.

The Applicant further contends that even assuming, *arguendo*, that the combination of Hamatani (and/or Yamazaki '731), Zhang, Curran and Kim is proper, there is a lack of suggestion as to why a skilled artisan would use the proposed modifications to achieve the unobvious advantages first recognized by the Applicant.

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.

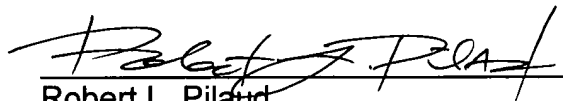
In the present application, it is respectfully submitted that the prior art of record, alone or in combination, does not expressly or impliedly suggest the claimed invention and the Official Action has not presented a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.

For the reasons stated above, the Official Action has not formed a proper *prima facie* case of obviousness. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

New claims 58-62 have been added to recite additional protection to which the Applicant is entitled. It is noted that new independent claim 58 and dependent claim 62 recite an insulating base film, which is supported in the specification at page 8, lines 22-25. For the reasons stated above and already of record, the Applicant respectfully submits that new claims 58-62 are in condition for allowance.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,



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